

LIFETIME EXTENSION OF SCR-DENOX CATALYSTS USING SCR-TECH'S HIGH EFFICIENCY ULTRASOUND REGENERATION PROCESS

During the operation of coal-fired power plants, SCR-DeNOx catalyst is gradually deactivated by fly ash plugging, so-called catalyst poisons in the flue gas, or the formation of blinding layers. In order to maintain the desired NOx removal efficiency at a maximum NH3 slip, the only choice used to be to add or replace used catalyst with new catalyst. The potential for significant cost savings led to the need to develop an advanced technology for the regeneration of deactivated SCR catalyst as an economically much more attractive alternative to replacement. However, the effectiveness of catalyst regeneration strongly depends on the efficiency of the process used, which in turn depends on the in-depth knowledge of specific deactivation causes.

This paper presents methods for removing these catalyst poisons on an industrial scale and regenerating the used catalyst. It also presents the experiences from more than 2000 m³ of catalyst regeneration performed using the SCR-Tech ultrasound regeneration process. This process was developed in Germany in order to regain as much catalyst activity as economically feasible. The process has been proven to reinstate full catalyst activity and the regenerated catalyst has a similar deactivation rate during operation as new catalyst. This is a cost effective and efficient way to rejuvenate used catalysts to become fully comparable to new catalyst.

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